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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/916,519

07/27/2001

Masao Sato

S004-4357

9035

7590

10/03/2003

ADAMS & WILKS

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EXAMINER

SONG, HOON K

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,519

Applicant(s)

SATO, MASAO

Examiner

Hoon Song

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2 and 5-21 is/are allowed.
- 6) ☒ Claim(s) 3 and 22 is/are rejected.
- 7) ☒ Claim(s) 4 and 23-26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on July 27, 2000. It is noted, however, that applicant has not filed a certified copy of the 2000-227378 application as required by 35 U.S.C. 119(b).

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on April 08, 2001. It is noted, however, that applicant has not filed a certified copy of the 2001-108509 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rossiger et al. (US 6038280) in view of Ishijima (US 3806726).

Regarding claims 3 and 22, Rossiger teaches a fluorescent x-ray film thickness measuring device comprising:

An x-ray generating system (4) having a high-voltage power source (3) and an x-ray tube (2) for generating and emitting primary x-rays;

Focusing means including a first collimator block (12) for focusing the primary x-rays onto microscopic measurement regions in a sample (7) and a second collimator block (14 with 16) disposed above the first collimator block for receiving primary x-rays

Art Unit: 2882

from the x-ray generating system and irradiating the primary x-rays toward the first collimator block;

A sample observation optical system (28) for observing the sample during focusing of the primary x-rays for use in positioning of the microscopic measurement regions relative to the primary x-rays;

A detector (17) for detecting x-ray fluorescence generated from the sample; and

A frequency analyzer (21) for analyzing a frequency of a signal from the linear amplifier.

However Rossiger fails to teach pre-amplifier for amplifying a signal from the detector and a linear amplifier for amplifying a signal from the pre-amplifier.

Ishijima teaches the pre-amplifier and linear amplifier (figure 1).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to adopt Ishijima's pre-amplifier and linear amplifier to Rossiger's apparatus in order to adjust the output pulse height of the counter to remain constant (column 1 line 15). Thus it would provide more accurate measurement results.

Allowable Subject Matter

Claims 1-2 and 5-21 are allowed over prior art.

None of the prior art teaches or suggests an ^{x-ray}~~x-ray~~ fluorescence film thickness measuring device comprising a system having a liquid nitrogen-less PIN diode x-ray detector or a silicon drift chamber used as a first sensor with low counting efficiency but high energy resolution for detecting x-ray fluorescence generated ^{from}~~to~~ the sample, and a proportional counter, CdZnTe detector, or a scintillation counter as a second sensor

2882
9/21/03

2882
9/21/03

having low energy resolution but high counting efficiency compared to the first sensor as claimed in independent claims 1 and 2.

None of the prior art teaches or suggests an x-ray fluorescence film thickness measuring device comprising a first sensor with low counting efficiency but high energy resolution for detecting x-ray fluorescence generated from the sample and a second sensor having low energy resolution but high counting efficiency compared to the first sensor as claimed in independent claim 5.

Claims 4, 23, 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: None of the prior art teaches or suggests the first collimator block comprises a half mirror section and a collimator section disposed at a side surface of the half mirror section as claimed in dependent claims 4 and 23.

None of the prior art teaches or suggests that the detector comprises a first sensor with low counting efficiency but high energy resolution for detecting x-ray fluorescence generated for the sample and a second sensor having low energy resolution but high counting efficiency compared to the first sensor as claimed in dependent claim 26.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is 703-308-2736. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 703-308-4858. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Hoon Song

HS


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER